EXHIBIT 5

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

OYSTER OPTICS, LLC,

Plaintiff,

v.

CIENA CORPORATION,

Defendant.

Case No. 4:17-cv-05920-JSW

CLAIM CONSTRUCTION ORDER

Re: Dkt. Nos. 97, 99

The Court has been presented with a technology tutorial and briefing leading up to a hearing pursuant to *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996). This Order construes the disputed claim terms selected by the parties, which appear in the patents at issue in this case: U.S. Patent Nos. 7,620,327 (the "'327 Patent"), 8,374,511 (the "'511 Patent"), and 8,913,898 (the "'898 Patent").

BACKGROUND

A. The Asserted Patents

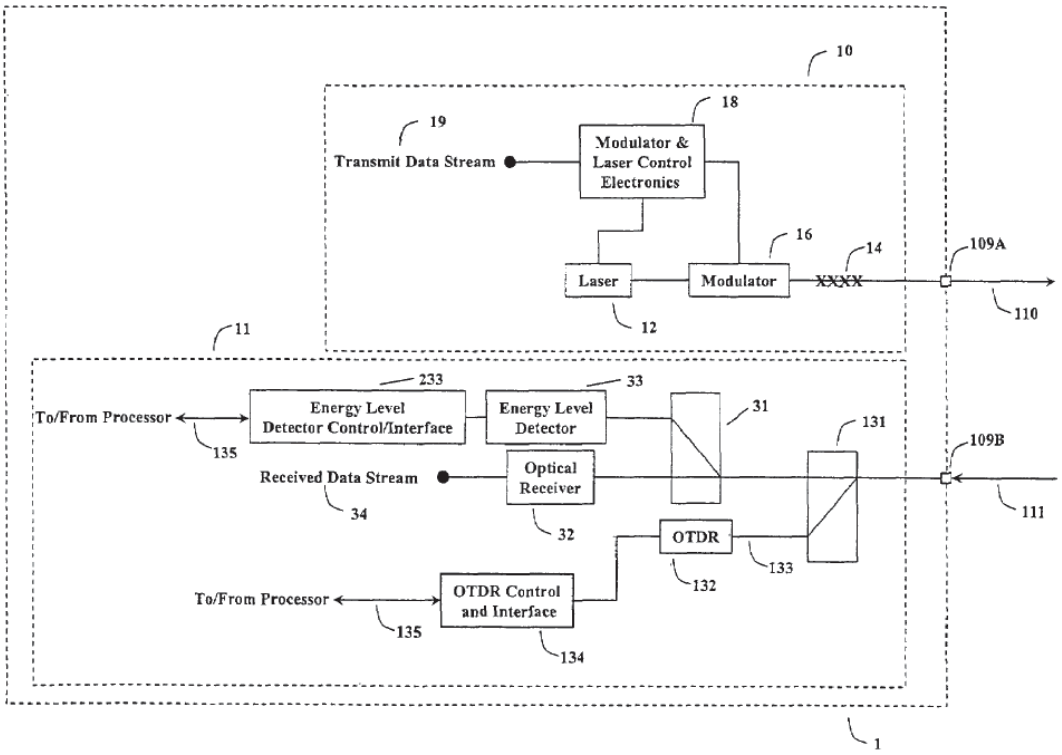
Plaintiff Oyster Optics LLC ("Oyster") asserts that defendant Ciena Corporation ("Ciena") infringes three of its patents. The patents are related and share a common specification. The '511 Patent is a continuation of the '327 Patent, while the '898 Patent is, in turn, a continuation of the '511 Patent.

The common specification describes a transceiver card for secure communications over fiber optic networks. (*See* '327 Patent at 1:11-13, 2:22-24.) Fiber optic networks use light to communicate. (*See id*. at 1:20-35.) In traditional transceiver cards, a "transmitter" modulates the amplitude of a light beam (creating an "optical signal") to transmit data. (*Id*. at 1:25-30.) A "receiver," in turn, converts the light back into data by reading electronic output. (*Id*. at 1:30-33.)

Because the amplitude of light relates to its energy, the receiver need only determine if the light produces an electronic output to generate a stream of zeros and ones. (*Id*. at 1:40-44.)

Traditional receiver cards suffer from lack of security. (*Id*. at 1:50-51.) An attacker may "tap" the fiber optic cable by adding or removing light from the system. (*Id*. at 3:27-34.) To solve this problem, the asserted patents propose the use of an "energy level detector" coupled between the receiver and its fiber input. (*Id*. at 2:38-40.) The energy level detector monitors the energy of the incoming light and generates an alert if there is a drop or increase indicating a potential tap. (*Id*. at 3:20-34.) To prevent the light from accidentally setting off the alarms, the patents preferably use phase modulation—as opposed to amplitude modulation—which (the specification states) enables better tap detection because "the amplitude of the optical signal is constant" and "a drop in the optical signal level is more easily detected." (*Id.* at 4:39-47.)

Figure 2 shows the common transceiver card architecture below. A transmitter 10 (outlined in dashed lines at the top) contains a laser 12 that beams light and a modulator 16 that encodes data into that light. (*Id*. at 4:25-38.) A receiver 11 (outlined in dashed lines below the transmitter) has an optical receiver 32 that converts the optical signal back into data. (*Id*. at 4:64-67.) Optical signals exit the transmitter through fiber 110 and enter the receiver through fiber 111. (*Id*. at 4:26-27, 4:48-49.) While entering the receiver, some of the light from the optical signal is diverted using splitters 31 and 131 to the energy level detector 33 and a similar component called the OTDR, which detects fiber breaches. (*Id*. at 4:40-64, 2:5-8.) Information from both of these components is sent to the processor in order to, for example, generate an alert for network maintenance personnel. (*Id*. at 5:1-19.)



(*Id*. at Fig. 2.)

Claim 1 of the ’327 Patent recites:

> 1. A transceiver card for a telecommunications box for transmitting data over a first optical fiber and receiving data over a second optical fiber, the card comprising:
>
> a transmitter for transmitting data over the first optical fiber, the transmitter having a laser, a modulator, and a controller receiving input data and controlling the modulator as a function of the input data, the transmitter transmitting optical signals for telecommunication as a function of the input data;
>
> a fiber output optically connected to the laser for connecting the first optical fiber to the card;
>
> a fiber input for connecting the second optical fiber to the card;
>
> a receiver optically connected to the fiber input for receiving data from the second optical fiber; and
>
> an energy level detector optically connected between the receiver and the fiber input to measure an energy level of the optical signals, wherein the energy level detector includes a plurality of thresholds.

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Claim 1 of the ’511 Patent recites:

1. A method for operating an optical fiber multiplexor comprising:

feeding input data to a controller of a transmitter of a telecommunications box, the telecommunications box having an electronic data input for the input data and an electronic data output;

using the controller, controlling a modulator to modulate light from a laser as a function of the input data;

sending the modulated light as an optical signal from the transmitter over an optical fiber;

receiving the optical signals from the optical fiber at a receiver of a further telecommunications box and converting the optical signals to electronic output data;

passing the optical signals to a photodetector to produce an electric signal; and

filtering the electrical signal to produce an average optical power.

Claim 1 of the ’898 Patent recites:

1. A transceiver card for a telecommunications box for transmitting data over a first optical fiber and receiving data over a second optical fiber, the transceiver card comprising:

a transmitter having a laser, a modulator, and a controller configured to receive input data and control the modulator to generate a first optical signal as a function of the input data;

a fiber output optically connected to the transmitter and configured to optically connect the first optical fiber to the transceiver card;

a receiver configured to receive a second optical signal from the second optical fiber and to convert the second optical signal to output data;

fiber input optically connected to the receiver and configured to optically connect the second optical fiber to the transceiver card; and

an energy level detector optically connected between the receiver and the fiber input to measure an energy level of the second optical signal, wherein the energy level detector includes a plurality of thresholds.

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B. Procedural Background

The patents-at-issue were previously asserted and construed in *Oyster Optics, LLC v. Coriant Am. Inc.*, No. 2:16-CV-1302-JRG (E.D. Tex., filed Nov. 24, 2016). There, the court construed the terms "phase modulate," "receiver," and "the optical signals," also at issue in this Order. *See Oyster Optics, LLC v. Coriant Am. Inc.*, No. 2:16-CV-1302-JRG, 2017 WL 6026729, at **4-9, **16-19, **19-22 (E.D. Tex. Dec. 5, 2017). The defendants then sought reconsideration of the term "receiver," which was denied. *Oyster Optics, LLC v. Coriant Am. Inc.*, No. 2:16-CV-1302-JRG, 2018 WL 7019353 (E.D. Tex. Mar. 2, 2018). Finally, the defendants sought summary judgment based on the absence of "phase modulation" in their products, which led the court to further clarify its construction of the term. *Oyster Optics, LLC v. Coriant Am. Inc.*, No. 2:16-CV-1302-JRG, 2018 WL 3067727 (E.D. Tex. June 21, 2018). The table below summarizes the final constructions in that litigation relevant to this Order:

Term	E.D. Tex. Construction
the optical signals	the optical signals received on the fiber input from the second optical fiber
receiver	"receiver without a demodulator" in the '898 Patent "receiver" (plain meaning) in the '327 and '511 Patents
phase modulate	alter the phase of light to create an optical signal having a phase that is representative of data. User of phase modulation excludes use of amplitude modulation.

In addition to the Texas litigation, the asserted patents have been construed in *inter partes* review ("IPR"). In IPR2017-02173 and IPR2018-00259, the examiner denied institution of '327 Patent IPRs, in part, because "optical signals" was construed to refer to the signals transmitted by the transmitter. (*See* Dkt. No. 100-6 ("IPR2017-02173 Institution Decision") at 17, 23-27; Dkt. No. 100-8 ("IPR2018-00259 Institution Decision") at 17-18.) Also, in IPR 2018-00070 and IPR2017-01881, the examiner construed "transmitter having a laser" in the '898 Patent as a transmitter "holding, including, or containing a laser." (Dkt. No. 100-10 ("IPR2018-00070 Institution Decision") at 18; Dkt. No. 100-13 ("IPR2017-01881 Institution Decision") at 13.)

ANALYSIS

A. Legal Background

Claim construction is a question of law for the Court. *Markman*, 517 U.S. at 384. It is a "bedrock principle" of patent law that "the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). "The purpose of claim construction is to determine the meaning and scope of the patent claims asserted to be infringed." *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008). The Court has an obligation to assign "a fixed, unambiguous, legally operative meaning to the claim" in order to "ensure that questions of the scope of the patent claims are not left to the jury." *Every Penny Counts, Inc. v. Am. Express Co.*, 563 F.3d 1378, 1383 (Fed. Cir. 2009) (quotation omitted).

Claim terms are generally given "their ordinary and customary meaning"—i.e., "the meaning that the terms would have to a person of ordinary skill in the art at the time of the invention." *Phillips*, 415 F.3d at 1312-13. There are only two exception to this rule: (1) "when a patentee sets out a definition and acts as his own lexicographer," and (2) "when the patentee disavows the full scope of a claim term either in the specification or during prosecution." *Thorner v. Sony Computer Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

In determining the ordinary and customary meaning, the claim language "provide[s] substantial guidance as to the meaning of particular claim terms." *Phillips*, 415 F.3d at 1314. Additionally, "the context in which a claim term is used in the asserted claim can be highly instructive." *Id*. However, a person of ordinary skill in the art is "deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id*. at 1313. The specification "is always highly relevant to the claim construction analysis" and is usually "dispositive." *Id*. at 1315. The scope of the claims must be "determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim." *Id.* at 1316 (quoting *Renishaw PLC v. Marposs Soceta' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998)). Thus, the construction that "stays true to the claim language and most naturally aligns with the patent's

description of the invention will be, in the end, the correct construction." *Id.*

In addition to the claims and the specification, the prosecution history may be used "to provide[] evidence of how the PTO and the inventor understood the patent." *Id*. at 1317. *Id*. "[A]ny explanation, elaboration, or qualification presented by the inventor during patent examination is relevant, for the role of claim construction is to 'capture the scope of the actual invention' that is disclosed, described and patented." *Fenner Inv., Ltd. v. Cellco P'ship*, 778 F.3d 1320, 1323 (Fed. Cir. 2015). The claims, specification, and prosecution history together constitute the "intrinsic evidence" that forms the primary basis for claim construction. *Phillips*, 415 F.3d at 1312-17 (citation omitted). Courts may also consider extrinsic evidence if it is "helpful in determining the 'true meaning of language used in the patent claims'" and is not contradicted by the intrinsic evidence. *Id*. at 1318 (quoting *Markman*, 52 F.3d at 980).

B. "the optical signals"

Oyster's Proposed Construction	Ciena's Proposed Construction
"the optical data signals received on the fiber input from the second optical fiber"	"transmitting optical signals" is the antecedent basis for "the optical signals." Otherwise, indefinite.

The term "the optical signals" appears in claims 1, 14, 25, and 36 of the '327 Patent. It also appears—without dispute over claim construction—in claims 1 and 9 of the '511 Patent. The '327 Patent claims recite (1) a transmitter that transmits "optical signals for telecommunication" over a first optical fiber, (2) a receiver that receives "data" from a second optical fiber, and (3) an energy level detector coupled between the receiver and the second optical fiber input "to measure an energy level of *the optical signals*."

The parties dispute the antecedent basis for "the optical signals." Ciena contends that the only antecedent basis for the term is the "optical signals for telecommunication" transmitted by the transmitter. Oyster disagrees and counters that such construction makes no sense in the context of the claims and the invention. Oyster argues, instead, that the antecedent basis for "optical signals" is the implied optical signal received by the receiver. In the Texas litigation, the court agreed with

Oyster and found that Ciena's construction "would appear to result in inoperability and is therefore disfavored." *Oyster Optics*, 2017 WL 6026729, at *21. However, in the IPRs for the '327 Patent, the examiner found that "the optical signals" referred to the transmitted signals. (*See* IPR2017-02173 Institution Decision at 17.)

As an initial matter, the Court finds that the claims and specification support Oyster's construction.[1] Ciena's construction has two interpretations, both of them implausible. First, Ciena's construction could mean that the energy level detector measures the optical signals before they are transmitted by the transmitter. However, as shown in Figure 2, the energy level detector is located within the receiver, not the transmitter. The claims expressly require the energy level detector to be "optically connected between the receiver and the fiber input." (*See, e.g.*, '327 Patent at claim 1.) The specification provides no hint of measuring the energy of the transmitted signals, but consistently describes measuring the energy of the received signals. (*See id.* at 2:38-40, 5:6-7, claim 9, claim 33.) Indeed, the specification expressly states that "the energy level detector *must be at the receiver side*." (*Id*. at 6:48-49 (emphasis added).)

The second interpretation of Ciena's construction is that the optical signals are transmitted over the first optical fiber, but are then "looped back" to the receiver over the second optical fiber. This interpretation is pure conjecture. The claims require two optical fibers—one for transmitting and another for receiving optical signals. (*Id*. at claims 1, 14, 25, 36.) The second interpretation requires imagining a component on the other side of the transceiver card, such as a router, that receives the optical signals and sends them back to the *same* transceiver card. (*See* Dkt. No. 100-22 at 98:19-99:4.) But the specification makes no mention of such components.[2]

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[1] The Court has reviewed the examiner's construction in the IPRs and respectfully disagrees. The examiner's decision relies on a strict application of antecedent basis and consideration of the prosecution history. However, the examiner did not consider the claims in the context of the specification or explain how the invention would *work* if construed as stated. The Court declines to adopt a construction divorced from the specification. *Phillips*, 415 F.3d at 1321; *see Wi-Fi One, LLC v. Broadcom Corp.*, 887 F.3d 1329, 1346 (Fed. Cir. 2018) (construing claims to be "faithful to the invention" despite clear claim language).

[2] Of course, the specification also does not mention another transceiver for sending the optical signals received by the receiver. However, because the ordinary function of transceivers is to communicate with other transceivers, the other transceivers may be assumed. (*See id.* at 3:34-35.)

On the contrary, the specification criticizes prior art systems that "require the light to travel over a loop" because they "do not work particularly well with existing multiplexors or card formats." ('327 Patent at 1:57-65.) The inventions, on the other hand, are meant to work with standard optical fibers and replace existing transceiver cards. (*See id*. at 3:34-55, 2:59-3:3; *see also id.* at 3:43-55 (describing manufacturing methods for creating the invention that do not require rerouting optic fibers).) Oyster further convincingly argues that sending and receiving data on the same transceiver card serves no useful communication purpose.[3] (*Cf. id.* at Fig. 2 (showing different data streams for "transmit" and "received").) The claims and specification thus support neither of Ciena's possible interpretations, but are naturally read to require measuring the energy of the (implied) received optical signal.[4]

Nevertheless, during prosecution, Oyster made statements referring to measured "optical signals" as "transmitted" signals. During prosecution, the examiner rejected the claims over U.S. Patent Application 2002/0196501 to Buss in view of U.S. Patent No. 5,680,234 to Darcie. (Dkt. No. 97-9 ("Jan. 21, 2009 Rejection") at 4.) In response, Oyster amended the claims to add that the transmitter "transmit[s] *optical signals for telecommunications* as a function of the input data," and that the energy level detector "measure[s] the energy level of *the optical signals*." (Feb. 13, 2009 Amendment at 4 (emphasis added).)

Oyster argued that Darcie does not disclose these limitations because it "does not measure an energy level of the optical signals for telecommunication as claimed, but rather only those of a diagnostic signal" and, further, "it would not have been obvious to measure the telecommunication signal of Buss with the Darcie diagnostic receiver for optical power" because "Darcie's power

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[3] Oyster's contention is supported by the prosecution history and, in particular, the IPRs, where the examiner found no motivation to combine to add a loopback. (IPR2018-00258 at 23-25.) The examiner noted that Ciena's proposed loopback reference discloses measuring the energy of a "monitor signal," not a "communication signal," similar to Darcie from the file history. (*See id*. at 24-25.) That Ciena's best prior art provides no reason to measure looped-back *communication* signals (as opposed to diagnostic signals) underscores the lack of useful purpose.

[4] At the claim construction hearing, Ciena did not dispute that "the optical signals" refers to the received signals but only argued that those signals are the same as the transmitted ones. (*Cf.* Dkt. No. 120-1 at 22.) There is therefore no dispute that interpreting "the optical signals" as "received" signals represents the ordinary meaning apparent from the claims and specification.

measurement relates to the diagnostic signals." (*Id*. at 12.) Oyster also stated as follows:

> Without prejudice to a continuation application, however, applicants have amended the claims to recite "a transmitter for transmitting data over the first optical fiber, the transmitter having a laser, ~~and~~ a modulator, and a controller receiving input data and controlling the modulator as a function of the input data, the transmitter transmitting optical signals for telecommunication as a function of the input data" and "an energy level detector" to measure an energy level of the transmitted optical signals. See claims 22 and 34.

(*Id*.)

Ciena now argues that this amendment demonstrates that "the optical signals" refers to the signals transmitted by the transmitter. By amending both limitations simultaneously, the amendment purportedly relates "the optical signals" back to the transmitted "optical signals for telecommunication." Moreover, Oyster's statement (reproduced above) appears to refer to "the transmitted optical signals," potentially confirming the antecedent basis for the term.

However, on balance, the Court finds that the prosecution history is not so clear and unmistakable as to require deviation from the ordinary meaning apparent from the claims and specification. The remarks as a whole focus on Darcie's use of "diagnostic" signals, not the measurement of "transmitted optical signals." Read in context, the reference to "transmitted optical signals" refers to signals transmitted for telecommunication (by any transceiver), not the specific signals sent by the transmitter. Moreover, measuring the energy level of "transmitted" signals would not have distinguished Darcie, which also uses a loop-back configuration.[5] (*See* U.S. Patent No. 5,680,234 at 3:9-17.) Finally, the remainder of the prosecution history does not support Ciena's interpretation. The '511 Patent—which the parties agree requires measuring the energy of transmitted signals—expressly recites a second telecommunications box for the receiver, which shows that Oyster knew how to claim additional components when needed to perform communication, but did not do so for the '327 Patent.

[5] Ciena argues that its construction does not require a loopback. However, Ciena cannot have it both ways. Either the energy level detector measures signals before they are transmitted (contrary to the claims, specification, and purpose of detecting optic fiber taps), or the signals are transmitted over the first optic fiber and measured after they are received on the second optic fiber, which requires a loopback. That the claims may use additional components, such as a router, does not change the basic nature of a loop.

In short, the claim construction here presents a choice between a technical application of antecedent basis that defeats the purpose of the invention and requires imagining an unusual configuration of undisclosed components, and a reading that finds antecedent basis in an implied received signal. The first reading is that of a lawyer; the second reading is that of a person of ordinary skill in the art. The second reading governs. *See Phillips*, 415 F.3d at 1313 (requiring person of ordinary skill perspective). For the same reason, the lack of express antecedent basis does not render the claims indefinite. *See Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008) (explaining that lack of antecedent basis renders claims indefinite only if such basis "is not otherwise present by implication" and the meaning "is not reasonably ascertainable"); *see also Nautilus, Inc. v. Biosig Instr., Inc.*, 572 U.S. 898 (2014) (finding that claims are indefinite if they fail to confirm scope of invention "with reasonable certainty" when "read in light of the specification").

Accordingly, the Court construes "optical signals" as "the optical signals received on the fiber input from the second optical fiber."

C. "receiver"

Oyster's Proposed Construction	Ciena's Proposed Construction
'898 Patent: "receiver without a modulator" '327 and '511 Patents: No construction necessary	"receiver without a modulator"

The term "receiver" appears in all independent claims of the '327, '511, and '898 Patents. The parties agree that the ordinary meaning of a "receiver" is not limited to receivers without demodulators but further agree that the prosecution history limits the term to a "receiver without a demodulator" in the '898 Patent. However, Ciena contends that the same limitation should apply to the '327 and '511 Patents based on the statements in the '898 Patent prosecution history.

The case presents an unusual scenario for two reasons. First, the '898 Patent is later-issued patent while Ciena seeks to limit the earlier-issued '327 and '511 Patents that derived from its parent application. The '898 Patent is a continuation of the '511 Patent (its "parent"), which in turn is a continuation of the '327 Patent (the "grandparent"). The statements-at-issue were made

during prosecution of the '898 Patent, approximately four years after the '327 Patent issued and eight months after the '511 Patent issued. (*See* Dkt. No. 97-12 ("Oct. 21, 2013 Amend.") at 3, 9.)

Second, the statements purportedly limiting the meaning of the term "receiver" were made in response to an enablement rejection, not a novelty one. During prosecution of the '898 Patent, the examiner rejected claims reciting a "receiver having a demodulator" because such receivers are "not described in the specification in such a way as to enable one skilled in the art to which it pertains . . . to make and/or use the invention." (Dkt. No. 97-11 ("Jun. 26, 2013 Reject.") at 5.) In response, Oyster amended the claims to strike "having a demodulator," leaving only "a receiver," as shown below. (Oct. 21, 2013 Amend. at 3.) Oyster then successfully argued that the amended claims complied with the enablement requirement. (*Id*. at 12.)

> a receiver ~~**having a demodulator**~~ configured to receive a second optical signal from the second optical fiber and ~~**demodulate**~~ **to convert** the second optical signal to ~~**produce**~~ output data;

(*Id.* at 3.)

Accordingly, the Court addresses two issues: first, whether statements made during prosecution of a child application can limit the scope of earlier-issued parent-application claims, and second, whether an amendment made for purposes of enablement justifies limiting the scope of related claims.

1. Does Disclaimer in the Prosecution History of a Child Application Limit Parent Application Claims?

Beginning with the first issue, it is well-settled that "[a] statement made during prosecution of related patents may be properly considered in construing a term common to those patents, regardless of whether the statement pre- or post-dates the issuance of the particular patent at issue." *Teva Pharma. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1343 (Fed. Cir. 2015) (citing *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004)); *see also Verizon Serv. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1307 (Fed. Cir. 2007) (using statements in sibling application prosecution to construe already-issued patent); *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1312 (Fed. Cir. 2014) (recognizing that "statements made in related, later-prosecuted U.S. patents may inform the meaning of earlier issued claims"). That is because the

prosecution history demonstrates how the inventor understood the inventions, which is relevant to all related patents in which term is used. *See Microsoft*, 357 F.3d at 1350; *see also Phillips*, 415 F.3d at 1317 (explaining that the prosecution history "provides evidence of how the PTO and the inventor understood the patent").

That does not, however, mean that prosecution disclaimer made for a child application applies with full force to claims derived from a parent application. When discussing disclaimer, the Federal Circuit has generally cabined estoppel to *subsequent* applications only. *See, e.g.*, *Cordis Corp. v. Boston Sci. Corp.*, 658 F.3d 1347, 1356 n.5 (Fed. Cir. 2011) ("[A] disclaimer made in the parent application carries forward into the construction of the same claim term in the child." (citing *Verizon*, 503 F.3d at 1306)); *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1333 (Fed. Cir. 2003) ("[P]rosecution disclaimer may arise from disavowals made during the prosecution of ancestor patent applications."); *Augustine Med., Inc. v. Gaymar Indus., Inc.*, 181 F.3d 1291, 1300 (Fed. Cir. 1999) ("[T]he prosecution of a parent application may limit the scope of a later application using the same claim term."). In certain contexts, the court also applied disclaimer to claims derived from sibling applications. *E.g.*, *Verizon*, 503 F.3d at 1307.

However, the parties have not cited—and the Court has not found—any case where disclaimer made during prosecution of a child application applied retroactively to claims derived from a parent application. The Texas court similarly found "no authority which permits a disclaimer to be imputed from a *progeny to ancestor* when it is not, as *Microsoft* requires, a 'representation of [the patentee's] own understanding of the inventions disclosed in all [related] patents.'" *Oyster*, 2018 WL 7019353, at *4 (quoting *Microsoft*, 357 F.3d at 1350). Indeed, *Microsoft* apparently distinguished finding statements in a later prosecution "relevant" to claim construction and imposing disclaimer based on those statements. Although the court considered statements from a related patent prosecution, it affirmed *Georgia-Pacific Corp. v. U.S. Gypsum Co.*, 195 F.3d 1322, 1333 (Fed. Cir. 1999), which declined to find the patent owner "bound by" statements made "in connection with later application after the patent in suit had already issued." 257 F.3d at 1350 (citing *Georgia-Pacific*, 195 F.3d at 1333). *Microsoft* thus suggests that while statements made in later-filed applications are relevant to already-issued claims if they describe

the common invention, the patentee is not bound by disclaimer made during those later applications in construing the earlier-issued claims.

Ciena provides no policy rationale for extending prosecution disclaimer beyond these facts. Prosecution disclaimer has two policy justifications: first, it ensures that patent claims "are not 'construed one way in order to obtain their allowance and in a different way against accused infringers,'" and second, it "protects the public's reliance on definitive statements made during prosecution." *See Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1359-60 (Fed. Cir. 2017) (quoting *Omega Eng'g*, 334 F.3d at 1323-24 and *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995)). In *Aylus*, the court applied these rationales to find prosecution disclaimer based on statements made during IPR proceedings after the claims had issued. *Id*. at 1360. The court found that holding patentees to the statements made during an IPR "will ensure that claims are not argued one way in order to maintain their patentability and in a different way against accused infringers." *Id*.

But this justification does not apply to statements made during prosecution of a child application where the parent application has already issued. On the contrary, where the patentability of the parent claims has not been challenged, there is no danger of applying different constructions for purposes of infringement and validity. Moreover, the public notice function may not be served by enforcing prosecution disclaimer made for wholly different claims long after the parent application claims had issued. First, such statements are unlikely to achieve the type of "clear and unmistakable" disclaimer applicable to earlier claims that would justify a reasonable reliance. *Cf. Power Integrations, Inc. v. ON Semiconductor Corp.*, 396 F. Supp. 3d 851, 364 (N.D. Cal. 2019) (rejecting estoppel based on unreasonable reliance). Second, disclaimer could conceivably undermine public notice by changing the scope of the claims in a tangentially related proceeding without the benefit of established mechanisms of reexamination and reissue.

Accordingly, based on the foregoing, the Court considers Oyster's '898 Patent statements as "relevant" to the construction of the "receiver" term in the '327 and '511 Patents, but does not apply prosecution disclaimer based on those statements.

2. Does Oyster's Amendment for Purposes of Enablement Justify Limiting Related Claims?

Turning to the second issue, the Court considers whether Oyster's amendment and apparent acquiescence to the examiner's view that the common specification does not enable a "receiver having a demodulator" justify limiting the scope of the earlier-issued claims.

As an initial matter, a prosecution amendment made in response to an enablement rejection typically creates disclaimer for the amended claims themselves. *See, e.g.*, *UCB, Inc. v. Yeda Res. & Dev. Co., Ltd.*, 837 F.3d 1256, 1260-61 (Fed. Cir. 2016); *Biogen Idex, Inc. v. GlaxoSmithKline LLC*, 713 F.3d 1090, 1095-97 (Fed. Cir. 2013). However, for the reasons stated in the previous section, the Court declines to apply later disclaimer to claims derived from ancestral applications. Ciena nevertheless argues that Oyster's "admission" that the common specification does not enable a receiver having a demodulator justifies limiting those claims to preserve validity. *See Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1581 (Fed. Cir. 1996) (preferring a narrower construction where "there is an enabling disclosure that indicates that the applicant is at least entitled to a claim having the narrower meaning").

Assuming, without deciding, that Oyster's amendment constitutes an admission that the common specification does not enable receivers with demodulators, the Court declines to limit the claims on that basis. An enablement rejection does not have a straightforward application to claims to recite fewer elements than those rejected. That is because enablement applies to "'only the claimed invention,' not matter outside the claims." *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 959 F.3d 1091, 1100 (Fed. Cir. 2020) (quoting *Union Carbide Chem. & Plastics Tech. Corp. v. Shell Oil Co.*, 308 F.3d 1167, 1186 (Fed. Cir. 2002)). Unclaimed elements generally do not need to be enabled, even if the claims are broad enough to cover them, as long the patent enables one mode of making and using the full invention. *Edwards Lifesciences AG v. CoreValve, Inc.*, 699 F.3d 1305, 1309 (Fed. Cir. 2012); *see, e.g.*, *CFMT, Inc. v. Yieldup Int'l Corp.*, 349 F.3d 1333, 1338 (Fed. Cir. 2003) (finding that patent does not need to enable a "perfected, commercially viable embodiment absent a claim limitation to that effect"); *Durel Corp. v. Osram Sylvania Inc.*, 256 F.3d 1298, 1307 (Fed. Cir. 2001) (rejecting argument that claims needed to enable making claimed coatings from each precursor suggested in the specification).

This rule has strong reasons behind it. As the Federal Circuit has recognized, enablement should not "require the inventor to foresee every means of implementing an invention at pains of losing his patent franchise." *Invitrogen Corp. v. Clontech Labs., Inc.*, 429 F.3d 1052, 1071 (Fed. Cir. 2005). "Were it otherwise, claimed inventions would not include improved modes of practicing those inventions," and patent rights "would rapidly become worthless as new modes of practicing the invention developed." *Id*. For example, under Moore's law, chip size generally decreases every year. If patents were required to enable unclaimed features, an accused infringer could avoid liability simply by construing the claims to be limited to the chip size enabled at the time of the invention. But the Federal Circuit has consistently held that "after-arising technology" may be "captured within the literal scope of valid claims that are drafted broadly enough." *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1371-72 (Fed. Cir. 2008).

Here, the claims of the '327 and '511 Patents recite a "receiver"—not "a receiver having a demodulator." Hence, the patents need only enable one mode of making and using the invention having a "receiver." *Edwards*, 699 F.3d at 1309. An admission that the specification does not enable additional components, such as a demodulator, thus does not clearly render the full scope of the claims non-enabled. *See CFMT*, 349 F.3d 1338 (finding claims reciting "cleaning" enabled even if some levels of cleanliness were not). In any case, the issue is not nearly clear enough to justify limiting the scope of the claims absent prosecution disclaimer. *See Pfizer, Inc. v. Teva Pharmas., USA, Inc.*, 429 F.3d 1364, 1376 (Fed. Cir. 2005) (declining to construe term to preserve validity where party failed to present sufficient evidence of invalidity); *see also Hill-Rom Serv., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1374 (Fed. Cir. 2014) ("Courts should be cautious not to allow claim construction to morph into mini-trial on validity.").

Accordingly, the Court construes "receiver" as "receiver without a demodulator" in the '898 Patent and provides no construction for the term in the '397 and '511 Patents.

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D. "receiver configured . . . to convert the second optical signal to output data"

Oyster's Proposed Construction	Ciena's Proposed Construction
"receiver" as "receiver without a demodulator" Otherwise, no construction necessary	"a receiver that converts the second optical signal from optical to electronic form to recover the data carried by the second optical signal"

The term "receiver configured . . . to convert the second optical signal to output data" appears in claims 1 and 14 of the '898 Patent. The parties have two disputes: first, the parties disagree whether the optical signals must be converted to "electronic form," and second, Ciena seeks clarification that the output data reflects the data encoded in the second optical signal.

As to the first dispute, Oyster is plainly correct. Although the specification describes converting the second optical signal to electronic form, it uses no words of exclusion (such as "the present invention") that would suggest the invention is limited to such embodiments. (*See* '898 Patent at 1:32-35, 1:42-46, 5:2-5.) Nor did Oyster limit this ordinary meaning through disclaimer. During the '898 Patent IPRs, Oyster described the specification in the "overview of the patent," but did not suggest that the claims were limited to the written description.[6] (*See* Dkt. No. 100-9 ("IPR2018-00070 Prelim. Resp.") at 24, 28.)

For the second dispute, Ciena appears to be correct that "output data" refers to data encoded in the second optical signal. The specification explains that traditional transceivers transmit optical signals "representative of electronic data stream" and use a photodiode to "convert the optical signals back into the electronic data stream" at the receiver. ('898 Patent at 1:27-35.) The embodiments show that the receiver "converts the optical signal from optical to electronic form to recover the electronic data stream 34." (*Id*. at Fig. 2, 5:2-5.) The claims similarly recite "generat[ing] a first optical signal as a function of the input data" and "convert[ing] the second optical signal to output data" (where, presumably, the second optical signal is also a "function" of the data). (*Id*. at claims 1, 14; *accord id.* at Fig. 2.)

[6] Oyster's statements in the '511 Patent IPR have no relevance because the '511 Patent claims expressly require conversion to "electronic output data." (*See* '511 Patent at claim 1; Dkt. No. 100-19 at 44-46.)

Accordingly, the Court construes "output data" as "the data encoded in the second optical signal," but provides no construction for the rest of the term.

E. "phase modulate" / "phase modulator"

Oyster's Proposed Construction	Ciena's Proposed Construction
"alter the phase of light to create an optical signal having a phase that is representative of data. Use of phase modulation excludes use of amplitude modulation."	"alter the phase of light while keeping the amplitude of the light constant to create an optical signal having a phase that is representative of data."

The terms "phase modulate" or "phase modulator" appear in asserted claims 3, 16, 27, and 37 of the '327 Patent, as well as claim 9 of the '511 Patent and claims 3 and 17 of the '898 Patent. The parties dispute whether phase modulation allows for amplitude changes. Although both parties agree that phase modulation uses phase (not amplitude) to communicate, Ciena argues that amplitude must be kept constant based on the following disclosure in the specification:

> The transceiver of the present invention preferably operates in a phase-modulated mode . . . . The phase-modulated signals have the advantage that breach detection by the energy level detector work[s] more effectively, since the amplitude of the optical signal is constant and thus a drop in the optical signal level is more easily detected.

('327 Patent at 4:39-47.)

In the Texas litigation, the court initially construed "phase modulation" to require "keeping the amplitude of the light constant," consistent with Ciena's construction. *Oyster Optics*, 2017 WL 6026729, at *8. However, when defendants moved for summary judgment on this limitation, the court clarified that its construction only meant to exclude amplitude modulation, not to require keeping amplitude constant. *Oyster Optics*, 2018 WL 3067727, at *5. The court found Oyster's evidence on summary judgment consistent with that interpretation. *Id*. at *6-8. Oyster's evidence showed that "phase modulation may involve transient variations in amplitude that are not involved in representing data" but rather resulted from "technical limitations in practical implementations." *Id*. at *6. Defendants' experts in that case admitted that amplitude may inadvertently change between shifts in phase modulation such that requiring constant amplitude would exclude most commercial embodiments. *Id*. at *6-7.

While giving reasoned deference to the Texas court's interpretation,[7] the Court respectfully disagrees that the statements in the specification are limited to disparagement of amplitude modulation. As quoted above, the specification does not merely criticize amplitude modulation—it affirmatively characterizes phase modulation as having constant amplitude. (*See* '327 Patent at 4:39-47.) The Court cannot ignore the patentee's own understanding of the claim terms, which must guide claim construction even if not fully correct. *See UltimatePointer, L.L.C. v. Nintendo Co., Ltd.*, 816 F.3d 816, 823-35 (Fed. Cir. 2016) (affirming a construction narrower than the ordinary meaning of a claim term based on characterization in the specification). Moreover, there is no reason why amplitude changes made for purposes of modulation would interfere with tap detection, but those made for other reasons would not. *Cf. Paragon Solutions, LLC v. Timex Corp.*, 566 F.3d 1075, 1090-91 (Fed. Cir. 2009) (rejecting use limitations in apparatus claims). Accordingly, the Court construes "phase modulation" to give meaning to the statement that "the amplitude the [phase modulated] optical signal is constant."

As an initial matter, the fact that constant amplitude is hard to achieve in real life does not defeat the patentee's characterization. Courts have frequently dealt with technically challenging or even impossible statements by adding nuance to claim construction. For example, in *Paragon Solutions*, the claims recited "displaying real-time data." 566 F.3d at 1087. After reviewing the evidence, the court concluded that "'real-time' cannot mean instantaneous" because the claims require operations (such as data transmission) that would necessarily take time. *Id*. at 1088. The court then construed "displaying real time data" as "displaying data without intentional delay, given the processing limitations of the system and the time required to accurately measure data." *Id*. at 1092. Similarly, in *Power Integrations, Inc. v. Fairchild Semiconductor International, Inc.*, 904 F.3d 965, 972 (Fed. Cir. 2018), the court interpreted "fixed switching frequency" as permitting "natural variation" in frequency to avoid rendering the claims inoperable. Absolute statements may thus allow "natural" deviations to preserve the operability of the invention.

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[7] *Finjan, Inc. v. Symantec Corp.*, No. 14-cv-02998-HGS, 2017 WL 550453, at *3 (N.D. Cal. Feb. 10, 2017). *But see Aircraft Technical Pub'rs v. Avantext, Inc.*, No. C 07-4154 SBA, 2009 WL 3817944, at *3 (N.D. Cal. Nov. 10, 2009) (noting that courts have a duty to render an "independent judgment" on claim construction).

Here, the intrinsic evidence makes clear that perfect amplitude constancy is not required. The common specification shows an energy level detector in Figure 3 that includes components designed to address minor changes in amplitude. (*See* '327 Patent at Fig. 3.) First, the energy level detector includes a filter "to provide the average voltage level which represents the average optical power measured by photodetector 153." (*Id*. at 5:34-37.) The claims of the '511 Patent require such a filter even when using phase modulation, which suggests that phase modulation allows minor variations in amplitude. (*See* '511 Patent at claim 9.) Second, the energy level detector includes a plurality of thresholds, which are required by the claims of the '327 and '898 Patents. (*See id*. at 5:59-67; '327 Patent at claims 1, 14, 25; '898 Patent at claims 1, 14.) The existence of thresholds implies that some "sub-threshold" changes in amplitude are permissible and would still allow the energy level detector to "work more effectively" than with amplitude modulation, consistent with the specification.[8] ('327 Patent at 4:39-47.)

In light of this evidence, the Court interprets phase modulation to require "substantially," rather than "perfectly," constant amplitude. Because the term "substantially" may raise issues of indefiniteness if not cabined by the intrinsic evidence, "substantially" is interpreted to fulfill the purpose of allowing the energy level detector to work more effectively by permitting only minor variations not detected by the energy level detector. At the claim construction hearing, the parties agreed that real-world phase modulators would satisfy this requirement because they produce only minor and undetectable amplitude variations. Further, since forces other than phase modulation may affect amplitude, the Court modifies the construction to focus on the effects of phase modulation itself, rather than the final form of the modulated signal.

Accordingly, the Court construes "phase modulate" as to "alter the phase of light without substantially altering amplitude to create an optical signal having a phase that is representative of data." "Substantially altered" means that amplitude changes are detectable by the energy level detector.

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[8] Both parties rely on extrinsic evidence. The Court has reviewed that evidence, but finds that it lacks sufficient clarity to be useful for claim construction.

F. "a transmitter having a laser, a modulator, and a controller"

Oyster's Proposed Construction	Ciena's Proposed Construction
No construction necessary: "a transmitter having a laser, a modulator, and a controller."	"a transmitter having a laser, modulator, and a controller located within the transmitter."

The term "a transmitter having a laser, a modulator, and a controller" appears in claims 1, 14, 25, and 36 of the '327 Patent, as well as claims 1 and 14 of the '898 Patent.

The parties dispute whether the laser, modulator, and controller must be located within the transmitter. Ciena argues that the plain meaning of "having" suggests that they are. Moreover, the specification shows the recited elements located on the transmitter, and further states that the transceiver card is designed to be swappable, which would not be possible if components were located outside of the card. (*See* '898 Patent at Fig. 2, 2:26-29, 6:36-42, 4:32-43.) Further, the specification states that "[t]he laser amplitude modulator and laser . . . define a transmitter for transmitting the optical signal over an optical fiber." (*Id.* at 1:30-32.) The specification thus suggests that the laser and modulator must be located on the transmitter (as the defining elements of that transmitter) and that the controller must be located, at least, on the transceiver card.

The prosecution history confirms this understanding. During the IPRs for the '898 and '327 Patents, Oyster distinguished prior art that had an external laser by arguing that the claims required the laser to be located on the transmitter. (*See* Dkt. No. 100-12 ("IPR2017-01870 Prelim. Resp.") at 20-21; Dkt. No. 100-17 ("IPR2017-01871 Prelim. Resp.") at 23-25.) The examiner agreed with Oyster's interpretations, citing a dictionary that defined "having" as "to hold, include, or contain as a part or whole." (IPR2018-00070 Institution Decision at 17.) Oyster thus argues that disclaimer, in addition to the ordinary meaning, limits "having" to "including within."

Oyster does not substantively dispute this evidence, but argues that the ordinary meaning of the term should be construed as the examiner found it—"to hold, include, or contain *as a part or whole*." (*Id.* (emphasis added).) Whatever the merits of dictionary definitions, the one here appears to go beyond the meaning apparent from context provided by the intrinsic evidence. *Cf. Phillips*, 415 F.3d at 1321 (explaining that dictionaries, by their nature, will be broader than the construction required by the patent). Despite citing the dictionary, the examiner ultimately

adopted the construction of "having" as "holding, including, or containing." (IPR2018-00070 Institution Decision at 18.) Moreover, Oyster interpreted "having" in the IPRs as excluding external elements. (IPR2017-01871 Prelim. Resp. at 21.) Finally, the specification "defines" transmitters through the components. ('898 Patent 1:30-32.) Thus, to the extent that some parts of the transmitter may extend beyond its boundaries, they must still be substantially "contained" by the transmitter to constitute the same component.

Accordingly, the Court construes "transmitter having a laser, a modulator, and a controller" as a "transmitter containing a laser, a modulator, and a controller."[9]

CONCLUSION

Based on the analysis set forth above, the Court adopts the foregoing constructions of the disputed terms. The Court SETS a further case management conference for September 4, 2020, at 11:00 a.m. The parties are HEREBY ORDERED to submit a further joint case management report pursuant to Patent Standing Order ¶ 13 by no later than August 28, 2020.[10]

IT IS SO ORDERED.

Dated: August 10, 2020

JEFFREY S. WHITE
United States District Judge

[9] The Court fails to detect a substantive difference between "holding," "including," and "containing,"—all of which appear to refer to the transmitter physically encompassing the components—and thus adopts a construction based on "containing." *See Ecolab, Inc. v. Paraclipse, Inc.*, 285 F.3d 1362, 1374 (Fed. Cir. 2002) ("The ordinary meaning of 'contain' is 'to have within.'" (citing dictionary)).

[10] Ciena seeks to seal certain exhibits designated as confidential by Oyster and a third party. (Dkt. No. 99.) The designating parties have not filed supporting declarations. Accordingly, the motion to seal is DENIED. *See* Civ. L. Rule 75-5(e).